



TRANSLATION:

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60[1985]-24,743
- (12) Utility Model Kokai Gazette (U) (43) Kokai Date: February 20, 1985

EARLY DISCLOSURE
[Unexamined Utility Model Registration]

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Examination Requested (total: pages)

(54) Title of the Invention:

NET BAG

- (21) Application No.: 58[1983]-114,673
- (22) Application Date: July 23, 1983
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S P E C I F I C A T I O N

1. Title of the Invention

NET BAG

2. Scope of the Utility Model Registration Claim(s):

- (1) Net bag with an opening in the upper part formed by fusing front and

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1/2 & 1 1/2 bag with edge sealing strips.

back sheets at the edges on two sides, characterized in that said front sheet consists of a net base material made of a synthetic resin on the one hand and in that said back sheet consists of a film base material made of a synthetic resin on the other.

(2) Net bag as described in Claim 1, characterized in that a tape-like film is laid over the net base material in the fusing section at the two side edges of the bag, and in that the tape-like film and the back sheet are fused with said net base material sandwiched in between the two.

3. Detailed Description of the Invention

The present invention pertains to a net bag for packaging and displaying fruit and vegetables.

Net bags formed entirely of a net material and used as bags for packaging and displaying mushrooms or green soybeans are known. For foods of this kind, a net bag with high air permeability is a more advantageous type of packaging for prolonging the life of product than a bag sealed with a synthetic resin film.

However, the foregoing conventional example made entirely of a net material has the following drawbacks: it is usually expensive because the base material itself is relatively expensive; and a label indicating the contents must be placed together with the product in the bag because said indication cannot be printed on the net itself.

The present invention is aimed at providing a net bag without these drawbacks associated with conventional net bags, and is characterized in that, in a bag with an opening in the upper part formed by fusing front and back sheets at the edges on two sides, said front sheet consists of a net base material

made of a synthetic resin on the one hand and said back sheet consists of a film base material made of a synthetic resin on the other.

In describing actual examples of the present invention in detail below with reference to the figures, a net bag 1 according to the present invention is a bag open in the upper part formed by fusing front and back sheets at the two side edges in a manner similar to that of a conventional synthetic resin bag, but is made by using a net base material 2 made of a synthetic resin as the front sheet and a film base material 3 made of a synthetic resin as the back sheet. Preferably, a tape-like film 4 is laid on the net material 2 in the fused section at the two side edges of the foregoing bag, and the tape-like film 4 and the synthetic resin film 3 are fused with said net material 2 sandwiched in between the two. Accordingly, the synthetic resin film material 3, the synthetic resin net material 2, and a pair of tape-like films 4 are needed as the elements that make up the bag 1 in the actual example illustrated in Figure 1, and these elements should be prepared from mutually similar synthetic resins. For example, when using a commercial polyethylene product as the net material 2, the tape-like film 4 and the film material 3 should also be made of polyethylene. Alternatively, when using a film (trade named Polytrack, produced by Idemitsu Petrochemical Co., Ltd.) fusible with most resins as the tape-like material 4, or a resin film different from the aforesaid polyethylene net material, as the tape-like film and the film material, the polyethylene should be laminated or coated on the fusing surface of said film material 3 and the surface of the tape-like film 4 prior to use [See Revision].

To manufacture a bag according to the present invention from the aforesaid constituent elements, a strip-like product 5 with these elements fused



together is formed in advance. This means that the film material 3 being paid out on the lower side is positioned below and the tape-like film 4 is positioned above on the upper two edges so as to sandwich the net material 2 being paid out; the aforesaid strip-like product 5 is generated by a sealing machine 6; and this product is then wound onto a roll 7, as shown in Figure 2. The aforesaid sealing machine 6 should be provided in pairs that are placed on a pair of tape-like films, and consist of a belt 10 wound around a driving pulley 8 and a driven pulley 9 and also a heat seal roller 11 which is positioned against said belt and rotated. Said roller 11 incorporates a heater inside, and is provided with a rugged portion 12 on the circumferential surface. The aforesaid belt 10 is made of a silicon-based material or with a tetrafluoroethylene resin (trademarked Teflon) on the surface, and provided so as to satisfy requirements such as heat resistance, high thermal conductivity, and good strippability from the film. The aforesaid fusing work is thus carried out continuously by a sealing machine 6 of this kind while the aforesaid materials are being continuously conveyed. Since the heat from the heat seal roller 11 is passed indirectly to the materials to be fused via the belt 10, these materials will not be damaged and the belt 10 will be suitably cooled while rotating away from the roller. Alternatively, ultrasonic fusion by an ultrasonic sealing machine can also be employed, as a matter of course, in the present invention, in place of thermal fusion by the aforesaid heat sealing machine 6.

Here, the strip-like product 5 which forms the bag 1 according to the first actual example of the present invention has a cross section as shown in Figure 3. In this first actual example, the fused part at the two side edges of the strip-like product 5 is integrated with the net material 2 sandwiched between the tape-like film 4 and the film material 3, and the tape-like film 4

and the film material 3 are mutually integrated by bridge entwining as illustrated in Figure 4, which makes the fused part rigid and strong.

In the second actual example of the present invention, the two side edges of the strip-like product 5 to be fused are slightly extended out in the width direction, and after fusion said two edges are melt-cut in the fused part by a melt cutter 13, as shown in Figures 5(1) and 5(2). In this manner, the tape-like film 4 and film material 3 are integrated even further in the melt-cut part 14 in addition to being mutually integrated by bridge entwining, as shown in Figure 6, and the fused part becomes even more rigid and stronger.

In the third actual example of the present invention, the two side edges of the film material 3 are folded and overlaid by sandwiching the side edges of the net material 2, and said ~~folded piece serves as the tape-like film 4~~ as shown in Figure 7. The integrating by fusion of said tape-like film 4 and the film material 3 with the net material 2 sandwiched between the two is the same as in the above-mentioned examples. According to this example, the two side edges of the strip-like product 5 are wrapped by the aforesaid folded part, so that the end edge of the net material 2 is not exposed, thus providing a more attractive product.

In the fourth actual example of the present invention, the tape-like film 4 is formed by extending and folding the film material 3 in a manner similar to that of the foregoing third actual example on the one hand, and on the other the two side edges to be fused with said folding are made larger in advance in the width direction, and both said edges are melt-cut in the fused part by a melt cutter 13 after fusion, as shown in Figures 8(1) and 8(2). Thus, a fused part similar to that of the above-mentioned Figure 6 can be obtained.

When using a strip-like product 5 in accordance with the above-mentioned actual examples, the bag 1 of the present invention can be obtained by cutting said strip-like product 5 in the width direction at given intervals in the longitudinal direction. In the actual example of Figure 9, the strip-like product 5 is melt-cut and fused along the width, whereby the bottom 15 of the bag 1 is formed by said cut part, and on the other hand the opening edge of the other adjacent bag 1 is cut by a cutter, to form an opening 16.

Furthermore, to ensure rigid and strong bonding of the bottom of the bag 1, it is desirable to fuse a tape-like film 17 along the width at a given location of the strip-like product 5, and to fuse and integrate with the film material 3 by sandwiching the net material 2 with said tape-like film 17, as shown in another actual example illustrated in Figure 10. The fusing method with this tape-like film is basically the same as the method of fusing the side edges as shown in Figure 3. In this case, however, the strip-like product 5 is cut along the lower part of the tape-like film 17, i.e., line A-A, thereby forming the bottom of the bag 1 shown above in the figure and the opening of the bag 1 shown below in the figure. Furthermore, the bag 1 of the present invention thus formed can be used in the same way as a conventional net bag, namely, a commodity is placed in the bag via said opening, then said opening is closed by an appropriate method and the bag is displayed in the place of sale.

The present invention provides a bag open in the upper part and formed by fusing front and back sheets at the two side edges, as a net bag using a synthetic resin net material 2 for said front sheet on the one hand and a synthetic resin film material 3 for said back sheet on the other, as described above. Accordingly, even though air permeability as required for a conven-

tional net bag is provided, the bag is less expensive overall because the back sheet which forms half of the bag 1 is made of a cheap synthetic resin film 3. In addition, indications such as quality and trademarks can be freely printed on the aforesaid film portion. For this reason, the present invention is extremely useful in that the previous operating efficiency of placing a commodity in the bag along with a separately produced label is greatly improved by eliminating the need for a separate label.

Figure 1 is an exploded perspective view which shows the materials to be used in one actual example of the present invention. Figure 2 is a diagram which illustrates the process of producing the strip-like product which is a half-finished bag product according to the above-mentioned actual example. Figure 3 is a sectional diagram which illustrates the first actual example of the strip-like product. Figure 4 is an enlarged sectional view of the fused edge of the strip-like product of Figure 3. Figures 5(a) and 5(2) are sectional diagrams which illustrate the second actual example of the strip-like product. Figure 6 is an enlarged sectional view of the fused edge of the strip-like product of Figure 5. Figure 7 is a sectional diagram which illustrates the third actual example of the strip-like product. Figures 8(1) and 8(2) are sectional diagrams which illustrate the fourth actual example of the strip-like product. Figure 9 is a plan view of one actual example of forming a bag from the strip-like product. Figure 10 is a plan view of another actual example of the same thing.

(1) bag; (2) net material ;(3) film material; (4) tape-like film; and (5) strip-like product.

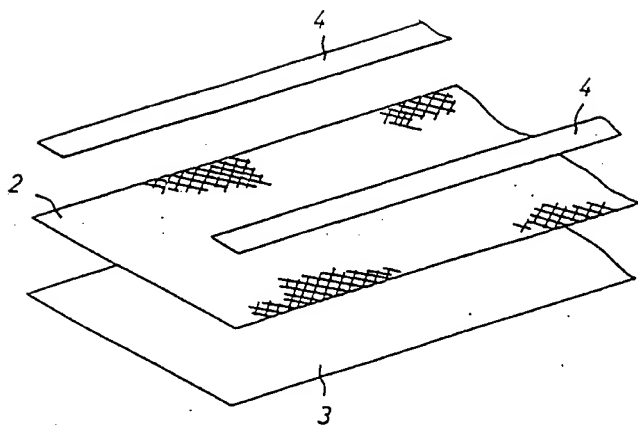


Figure 1.

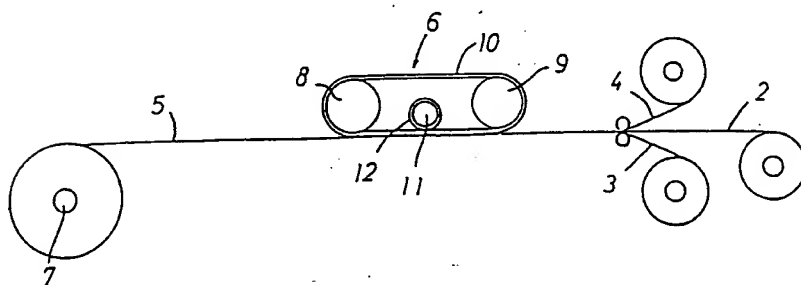


Figure 2.

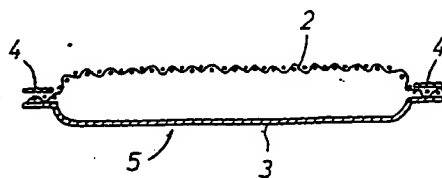


Figure 3.

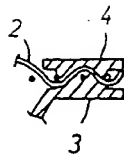


Figure 4.

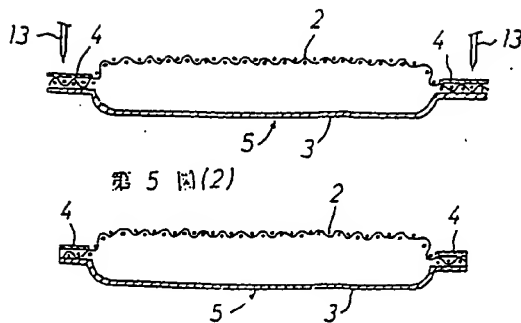


Figure 5.

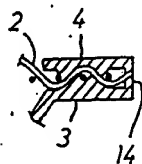


Figure 6.

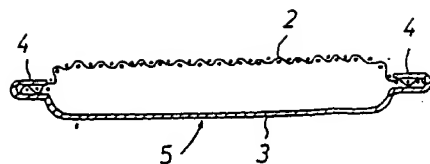


Figure 7.

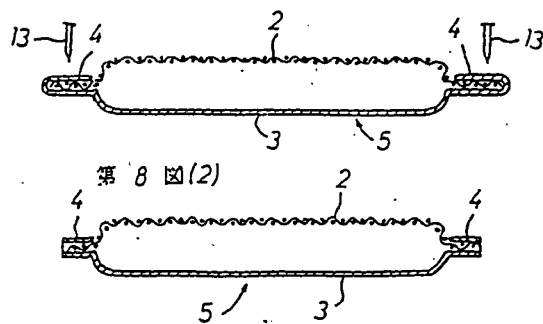


Figure 8.

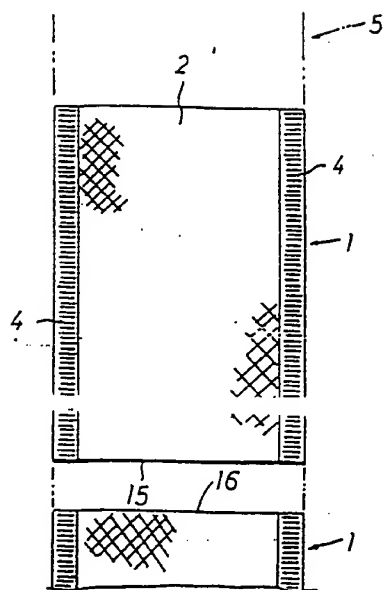


Figure 9.

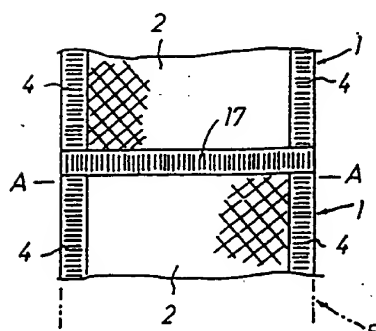


Figure 10.

FORM FOR PROCEDURAL REVISION (VOLUNTARY)

August 17, 1983

To: Director of the Patent Office

1. Matter to be Revised: Utility Model Registration Application submitted
July 23, 1983; Application No. 58[1983]-114,673

2. Title of the Invention: NET BAG

3. Party Requesting the Revision(s):

Relationship with the matter involved: utility model registration
applicant

Name of the party: Yamagata Gravure Co., Ltd.

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5. Reason for Rejection Notification Date (Date of the Order for Revision):

6. Subject of the Revision: "Detailed Description of the Invention" of the
"Specification"

7. Contents of the Revision: the following sheet

7. Contents of the Revision:

Line 18, page 3 to line 4, page 4 (lines 20-23, page 3 of the translation)
of the Specification:

"or a resin film different from the aforesaid polyethylene net material,
as the tape-like film and the film material, the polyethylene should be lami-
nated or coated on the fusing surface of said film material 3 and the surface
of the tape-like film 4 prior to use". is revised to

"or when using, for example, a resin film different from the aforesaid polyethylene net material as the tape-like film or film material, the polyethylene should be laminated on the fusing surface of said film material 3 or tape-like film 4, or a heat-sensitive adhesive prepared from a synthetic resin should be applied prior to use. Moreover, such a heat-sensitive adhesive may be applied in the melted state to both films and at the same time both films may be bonded."